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ABSTRACT

This module on vocational education in the whole school curriculum is 1 in a series of 10 modules written for vocational education teacher education programs. It is designed to help vocational teachers examine the role of vocational education in the whole school. Introductory materials include the following: a listing of competencies/tasks to be covered, objective, overview of the module, listing of suggested resources, and content/instructional strategies, including prerequisite information. The module consists of four major subsections. Each subsection, referred to as learning experience, addresses selected competencies from the listed competencies/tasks. Additionally, each learning experience contains several different activities. The learning experiences are as follows: (1) conduct an analysis of the relationship between the goals of vocational education and general education; (2) examine the image of vocational education; (3) identify and access state and local documents stipulating high school graduation requirements; and (4) develop a joint activity (with a math, science, or English teacher) to build a vocational student's skills in a key skill and/or core competency. A learning experience may consist of some or all of these components: list of competencies/tasks, introduction, activity/information sheet(s), supplemental reading, and worksheet(s). (YLB)

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MODULE:

Vocational Education in the Whole School Curriculum

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Notes

MODULE: VOCATIONAL EDUCATION IN THE WHOLE SCHOOL CURRICULUM

Introduction

As a vocational teacher, you will find yourself dealing more with vocational education than education in general. You will be thinking much more about the issues, needs, and challenges facing vocational education than those facing the broader school system (for example, English or math teachers). Certainly that's okay. It is very important that you understand vocational education. You need to be able to discuss and defend its role intelligently in the community. You will need to be able to "sell" it to parents and potential students. At times, you may even be called on to defend it when others question its value. So, it is vitally important that you be able to prepare yourself to be an effective and enthusiastic ambassador and advocate for vocational education.

At the same time, you are part of a "bigger picture." Tragically, vocational education has too often been viewed as something separate (or totally different) from "academics." If a person can't make it as a student, then the conventional wisdom has suggested that they be "dumped" into vocational education. Consequently, the image of vocational suffers.

In the sports world, people sit up and take notice when an athlete excels in more than one sport. A contemporary example is Bo Jackson who has made the professional All Star team in two sports, baseball (Kansas City Royals in 1989) and football (Los Angeles Raiders in 1990). Commercial advertisements proclaim, "Bo knows baseball" and "Bo knows football." Vocational education needs teachers who "know vocational education." But, just as important, vocational education also needs teachers who "know education" in a broader sense.

The activities in this Performance Based Teacher Education (PBTE) module are designed to explore the "big picture." That is, the goal is to help vocational teachers examine the role of vocational education in the whole school. At one level, the focus of this module will be on what is, on the current state of affairs. At another level, the module will assist teachers in the process of enlarging their vision of the possibilities and evolving role of vocational education at both the community and national levels.

Competencies/Tasks:

State the primary goals of vocational education.

Describe the goals of T&T and Health Occupations programs.

Describe and provide examples of how vocational education relates to the whole school curriculum.

Develop materials presenting vocational education in a positive light.

Identify local and state high school graduation requirements and explain how vocational education can be used to help fulfill them.

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Develop an overall strategy for explaining vocational education's role and contributions in the school.

Interface vocational education to the state's master list of key skills and core competencies.

Demonstrate methods of using vocational education to reinforce basic academic skills.

Promote vocational education as a means of practical application of content from other areas of the school's curriculum.

Objective:

While working with the activities contained this module, the student will develop an understanding and appreciation of the current and potential role of vocational education in the context of the whole school.

Overview of the Module:

The module consists of four major sub-sections. Each sub-section (referred to as ***Learning Experiences)*** addresses selected competencies from the Competencies/ Tasks which are listed above. Additionally, each of the ***Learning Experiences*** contains several different activities. The ***Learning Experiences*** are:

Learning Experience I:	Conduct an analysis of the relationship between the goals of vocational education and general education. (Competency/Tasks 1 & 2)
Learning Experience II:	Examining the image of vocational education. (Competency/Tasks 3, 4 & 6)
Learning Experience III:	Identify and access state and local documents stipulating high school graduation requirements. (Competency/Tasks 5, 6, & 7)
Learning Experience IV:	Develop a joint activity (together with a math, science and/or English teacher) to build a vocational student's skills in a key skill and/or core competency. (Competency/Tasks 8 & 9)

Suggested Resources:

1. Books

_____. (1991-92). Missouri State Plan for Vocational Education. Missouri Vocational Education (MOVE). Missouri Department of Elementary and Secondary Education, Division of Vocational and Adult Education, Jefferson City, MO.

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Silberman, H. F. (1984). The Unfinished Agenda: The Role of Vocational Education in the High School. The National Commission on Secondary Vocational Education. Columbus, OH: Ohio State University, National Center for Research in Vocational Education.

2. Missouri Vocational Resource Center (MVRC) Resources:

_____. (1983). Promote the Vocational Education Program: Module LT-F-2. (R 13.0405 GA296fa).

_____. (1978). Developing Performance Objectives and Criterion Referenced Measures for Vocational Education. (R 12.0301 AL11).

_____. Handbook for Secondary Vocational Education Program Planning. (R 13.0301 IL6).

_____. (1987). Vocational-technical Program and Course Standards. (R 13.0301 LA93).

Bregman, R. (1979). A Model for Planning Vocational Education at the Local Level. (R 13.0401 B727a).

Campbell, A. (1984). Vocational Education in an Information Age: Society at Risk? (R 13.0401 C152).

Campbell, P. B., & Panzano, P. (1985). Elements in Program Quality. (R 13.0401 B153).

Campbell, P. B., Gardner, J. A., & Seitz, P. (1982). High School Graduates: which Doors are Open? (R 13.0401 B153b).

Campbell-Thrane, L., Manning, K., Okeafor, K., & Williams, E. J. (1983). Building Basic Skills—Models for Implementation. (R 13.0401 T412).

Carnevale, A. P. (1984). A Society Based on Work. (R 13.0401 C217).

Champagne, A. (1986). Teaching for Workplace Success. (R 13.0401 C358).

Cooke, G. C. (1985). Toward Excellence in Secondary Vocational Education: Improving Teaching. (R 13.0401 C774).

Copa, G. Vocational Education and Youth Employment. (R 13.0401 C79).

Crowe, M. R., Pritz, S. G., & Veach, J. P. (1987). The Bridger's Guide — Basics: Bridging Vocational and Academic Skills Implementation Guide. (R 13.0401 C886a).

Crowe, M., Hettinger, L., Weber, J., & Johnson, J. (1986). Analysis of Students' Basic Skills Performance in Selected Instructional Delivery Systems: Final Report. (R 13.0401 C886).

Daggett, W. R. (1984). Strategic Vision and Planning: Key to Educational Improvement.

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Daniels, M. H., Karmos, J. S., & Presley, C. A. (1985). Toward Excellence in Vocational Education: Developing Pretechnical Curricula. (R 13.0401 D228).

Darcy, R. L. (1979). Vocational Education Outcomes: Perspective for Evaluation. (R 13.0401 D244).

Darcy, R. L. (1980). Some Key Outcomes of Vocational Education — A Report on Evaluation, Criteria, Standards & Procedures. (R 13.0401 D243).

Desy, J., Mertens, D. M., & Gardner, J. A. (1984). The Long Term Effects of Vocational Education Earnings, Employment, Education, and Aspirations. (R 13.0401 D479a).

Grasso, J. T. Impact Evaluation: The State of the Art. (R 13.0401 B727e).

Halfin, H., & Nelson, O. (1982). Emerging Skills Implications for Vocational Education. (R 13.0401 H138).

Hamilton, J. B. (1984). The Public Reacts to Education fort Tomorrow's Jobs. (R 13.0401 H18).

Hughes, R. (1984). Secondary Vocational Education: Imperative for Excellence. (R 13.0401 H874).

Jones, J., Watts, R., & Downing, S. (1979). Work Experience and Academic Credit: Issues and Concerns. (R 13.0401 J718).

Kadamus, J. A., & Daggett, W. R. (1986). New Directions for Vocational Education at the Secondary Level. (R 13.0401 K114).

Kolde, R. (1986). Secondary Vocational Education. (R 13.0401 K831).

Lotto, L. S. (1983). Building Basic Skills—Results from Vocational Education. (R 13.0401 L918).

Pritz, S. G. & Crowe, M. R. (1987). Instructional Program Development — Basics: Bridging Vocational and Academic Skills: Instructional Materials Development. (R 13.0401 C886c).

Pritz, S. G. & Crowe, M. R. (1987). Targeted Teaching Techniques — Basics: Bridging Vocational and Academic Skills Techniques for Joint Effort: The Vocational-Academic Approach. (R 13.0401 C886b).

Pritz, S. G. & Crowe, M. R. (1987). Targeted Teaching Techniques — Basics: Bridging Vocational and Academic Skills Techniques for Joint Effort: The Vocational-Academic Approach. (R 13.0401 D132).

Silberman, H. F. (1983). Determining Goals for Vocational Education. (R 13.0401 DS32).

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3. Film:

   Vocational Education—Is It for You? Recruitment Film for Sr. High or College Age Students. 30 min. Circle Oak Film. Available from MVRC. (Film 1).

4. Video:

   Innovative Teaching for Student Motivation. (University of Missouri Film Library Video)

   The Truth about Teachers. (University of Missouri Film Library Video)

   Introduction to Basics. (Available from MVRC). Video #5.

   Preparing Today for Tomorrow. Aerospace education services project. (Available from MVRC). Video #10.

   Vocational Education: Is it for You? Recruitment video for vocational programs. (Available from MVRC). Video #13.

   In Search of Excellence. 88 minutes. (Available from MVRC). MCE Video #3.

   A Passion for Excellence. 63 minutes. (Available from MVRC). MCE Video #23.

   Best Spots of 1989. 35 minutes. (Available from MVRC). MCE Video #131.

Content/Instructional Strategies

Prerequisite Information: None

Notes

Learning Experience I

Goals of Vocational Education and General Education - The Relationship

Learning Experience I Competencies/Tasks:

1. State the goals of Education in the State of Missouri.
2. State the primary goals of vocational education.
3. Describe the goals of T&T and Health Occupations programs.

Introduction:

Learning Experience I consists of four different activites and an assessment. Each of these activites is designed to help the student explore some aspect of goal setting in general and vocational education. The experiences include:

1. Reading the information sheet, Goals of Vocational and General Education.
2. Brainstorming examples which illustrate ways in which specific vocational education programs have been used (are being used) to meet general education goals.
3. Library research on the changing nature of vocational education goals (secondary, post-secondary, and adult levels).
4. Developing a set of vocational education goals as they might envision them being developed by a national advisory committee in the year 2050.
5. Completing the Learning Experience I assessment activity.

Activity Sheet #1

Vocational educators and vocational students tend to be "doers." Consequently, the curriculum is geared toward activity...toward doing or learning how to do something. This learning experience deals with a prior step, at the broader education goals which inform and drive both vocational and general education.

The Importance of Educational Goals

What sense would it make to pack the suitcase, take the dog to the kennel, wave good-by to the neighbors, get into the car, only then to turn to the family and ask "Where would you like to go for vacation this year"? Virtually every form of human activity; building, traveling, managing; requires some degree of planning and goal setting. An absence of goals usually deteriorates into wasted activity, disorganization, frustration, and a lack of coordinated effort.

Education, and vocational education in particular, is no exception. The selection of course content, projects, teacher and student activities, and more,should have a firm grounding in something more substantial than the personal interests of the teacher, what students have fun doing, or the most available project. Vocational education should be firmly rooted in solid and defensible educational goals.

The concept of goal setting and planning is not new to vocational education. The current emphasis on competency based education (CBE) illustrates the recognition of the importance of establishing targets against which to measure student performance. Curriculum materials which have been developed in recent years reflect this important emphasis.

But it's not enough to develop long lists of competencies or to know how to translate them into well written objectives, complete with conditions, tasks and criteria and an emphasis on performance. It is absolutely critical that specific planning include the "big picture" as well. Certainly students who are learning how to paint automobiles, dress wounds, or repair VCRs should be doing so because the activities fulfill specific competencies. Equally, and perhaps even more important, the activities should have grown out of the larger context of careful goal setting and educational planning. This larger context is what is referred to as the Goals of Vocational Education. Additionally, the Goals of Vocational Education should fit within the context of the goals of education in America's schools.

The Missouri Department of Elementary and Secondary Education (DESE) has established Educational Goals for the State of Missouri (see Figure #1 - page 8). These goals focus on four primary areas:

- Intellectual Development
- Physical Development
- Social Development
- Career Development

The traditional view is that vocational education should limit its focus to the last area, career development. Actually, aspects of vocational education should be designed to deliver aspects of all four categories. Specific goals have also been established for Vocational Education in the State of Missouri (see Figure #2 - page 9).

Figure #1

Educational Goals for the State of Missouri

It is the belief of the State Board of education that one of the fundamental rights of each individual is the right of equal access to educational opportunity—regardless of race, creed, or socioeconomic status. The product of such a system must be an individual who is adequately prepared to enter the next sequential phase of life—one who can readily adapt in a dynamic and rapidly changing society. Although these goals are categorized for convenience, a single category or combination of categories should not be interpreted to be mutually exclusive.

I. Intellectual Development

It is the goal of the State Board of Education that each student will have the opportunity to develop his/her intellectual ability to the extent of his/her developmental capacity. The development of intellectual ability should include not only the acquisition of knowledge, but also the creative ability to process and use that knowledge so that each individual becomes a literate and worthwhile member of society.

The State Board of Education believes that each individual must become proficient in communication, quantitative thinking, social processes, scientific understanding, decision making, and aesthetic appreciation in order to acquire the desired knowledge and fundamental intellectual processes.

II. Physical Development

It is the goal of the State Board of Education that each individual will have the opportunity to develop knowledge, understanding, and/or skills in the processes of physical growth and maturation, health and recreation to the extent of his/her developmental ability.

III. Social Development

It is the goal of the State Board of Education that each individual will have the opportunity to develop social skills to the extent of his/her developmental ability. These skills should be related to the individual's physical and social environment, cultural awareness, governmental institutions, avocational pursuits, and concept of self, morality and values.

IV. Career Development

It is the goal of the State Board of Education that each individual be provided with systematic and sequential activities at all levels to facilitate education-occupational decision making appropriate to his/her state of maturation. These activities should be related to the social significance of work, occupational exploration, occupational preparation, and adult occupational education.

_____. Educational Goals for the State of Missouri. Jefferson City, MO: Missouri Department of Elementary and Secondary Education. n.d., pp. vi-ix.

Figure #2

Department of Elementary and Secondary Education
Division of Vocational and Adult Education
Goals for Vocational Education

1. Provide vocational programs and services for secondary students commensurate with labor market demands.

2. Provide vocational programs and services for person who need post-secondary education commensurate with labor market demands.

3. Provide vocational programs and services for persons who need adult education commensurate with labor market demands.

4. Provide services essential for handicapped, disadvantaged, and limited English proficiency (LEP) individuals to participate in vocational education.

5. Provide a program of preservice and inservice vocational education for professional personnel development.

6. Provide leadership opportunities for the future development and continued growth of the Missouri program of vocational education.

7. Provide administrative, ancillary, and other supportive services to enhance the quality of vocational instruction program efforts.

8. Provide opportunities for research and development programs, exemplary programs, and related research activities to improve the quality of the Missouri program of vocational education.

9. Provide equal access to vocational programs, services, and activities for all individuals regardless of their sex, race, color, national origin or handicapping condition.

_____. (1986-88). Missouri State Plan for Vocation Education. Missouri Department of Elementary and Secondary Education, Jefferson City, MO.

Activity Sheet #2

At times it seems as if the goals of vocational and general education are pointed in different directions. Many see the "academic" parts of the school as preparing students for college. On the other hand, vocational education is viewed as preparing students for a specific line of work. Are the goals really that different? In what ways are they the same? How do they reinforce, contribute to, and build upon one another? Activity 2 explores these questions.

Brainstorming and Individual Goal Analysis

This activity will include two different kinds of experiences. The first will involve a brainstorming procedure which is designed to focus on the ways in which vocational education programs reinforce basic academic skills. The second part of the activity will involve an examination of some specific objectives to discover the ways in which they address the goals of the general academic areas.

Part 1: Small Group Brainstorming Activity

1. Break the class into small groups (4-5 individuals).

2. Instruct each group to select a particular vocational occupation. Have each of the groups select different occupations. Attempt to structure the groups such that they contain some diversity of teaching areas. Make sure that at least one member of the group is familiar with the vocation selected by the group.

3. Without the use of written materials (such as goal statements, lesson plans, etc.) have each group brainstorm within their group the ways in which the selected vocational area delivers general educational skills. For example, paint mixing in the autobody shop requires a knowledge of ratios, volume conversion facts, and computation ability. Have each group generate at least ten examples or principles.

4. After the individual groups have completed their brainstorming, reconvene the entire group. Receive the reports from each of the groups. Place the results on a the board. After the groups have reported, invite the group to add any additional thoughts that may have been overlooked.

5. Next, using the four categories for General Education for the State of Missouri, classify each of the items generated during the brainstorming activity into one of the categories.

6. Tabulate the number of items for each of the categories.

7. What patterns are evident? What strengths or weaknesses emerged? What changes should occur? Are the changes possible given the current state of the relationship between vocational and general education in the schools?

Part 2: Individual Competency Analysis

1. Working individually (or in pairs), examine a competency profile for a vocational course.

2. Select 8-10 competencies.

3. Identify the general academic skill which is (or could be) reinforced or taught with the competencies.

4. In what ways are vocational education classes better able to deliver the skills than general education classes? Which skills are impractical or undesirable for vocational education? In what ways would cooperative and collaborative efforts between vocational and general education programs strengthen the delivery of general education skills? of vocational skills? Provide examples.

Activity Sheet #3

This activity involves two kinds of experiences which usually frighten people away. But it doesn't have to be that way. One is library research. Most students of vocational education are attracted into the vocational classes because they like to make things, not do library research. The second part of this activity is exploring change. Change is another thing that tends to scare people. Most people prefer the security of knowing that things will stay more or less stable. Major changes are being proposed for vocational education. It is critical that teachers of vocational education be knowledgeable of the factors which are propelling them, and their vocation, into the future.

Researching Educational Goals

1. Have the students go to the library to look for journal articles which address the following topics:

   - The interface/relationship between academics and vocational education.
   - The changing nature of vocational education.
   - Skills for tomorrow's workforce.
   - Workforce needs for the future.
   - Vocational education as applied academics.
   - The growth of technology, implications for vocational education.
   - Erasing the line between vocational and academic subjects.

2. In conjunction with this assignment, it is suggested that arrangements be made to acquaint students with the various sources of information which are available in the library (and beyond the library). Students should know how to locate and access the following kinds of sources:

   - CD ROM databases
   - Online computer databases
   - Bound hardcopy indices, e.g., Readers Guide to Periodical Literature
   - Sources of vocational information

     - National Center for Research in Vocational Education (NCRVE)
     - Missouri Vocational Resource Center (MVRC)
     - Instructional Materials Laboratory (IML)
     - Missouri State Department of Elementary and Secondary Education (DESE)

3. Based on the information gathered from the reading, have the students prepare a futures paper which describes what they think vocational education is going to look like by the year 2020. The paper is to focus on two particular points.

   - First, the students should try to anticipate the changes that are likely to happen in their service areas. What will they need to be teaching to meet the workforce needs in 2020?

   - Second, they should attempt to address is the vocational-general education interface. What would the classrooms of the future be like if the goals of vocational and general education were to converge, working toward a common purpose? What would that kind of ideal school system look like if it could be developed by 2020?

4. Encourage the students to be creative. They need not worry about whether their projections are practical. The exercise should encourage them to stretch their thinking, not only about how their teaching areas are likely to change but about the possibilities for bridging the gulf which exists between vocational and academic parts of the schools system.

5. As a follow-up activity, have the students make a short presentation of their ideas to the class.

Activity Sheet #4

How many times have you listened to a group of people setting goals for the next year's activities for some organization? How many times have you heard the question, "What did we do last year?" Perhaps you've thought to yourself (or maybe you've had the courage to voice it), why don't we start with a fresh slate...with some new goals and new thinking?

Educational Goals - Doing Some Creative Thinking

This activity is based on the combined work which students have done in Activities 1 and 3. Have the class imagine that they are the national advisory board for vocational education in the year 2049. They are about to engage in the process of formulating goals for the year 2050. Using the thinking generated in Activity 3 and the current Missouri Goals for Vocational Education and the Educational Goals for the State of Missouri as reference material, have the students prepare a listing of the goals for American Vocational Education for 2050.

Activity Sheet #5

Students will demonstrate their successful completion of the competencies outlined in this unit by answering the following questions.

The Importance of Educational Goals

1. List the goals for general education which have been established by the State of Missouri.

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2. List the Missouri goals for Vocational Education.

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3. List and describe five resources or sources of information which are useful in examining vocational education within the context of the whole school.

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Learning Experience II

Examining the Image of Vocational Education

Learning Experience II Competencies/Tasks:

4. Describe and provide examples of how vocational education relates to the whole school curriculum.

5. Develop materials presenting vocational education in a positive light.

6. Develop an overall strategy for explaining vocational education's role and contributions in the school.

Introduction:

Learning Experience II consists of three different activites and an assessment. Each of these activites is designed to help the student explore and prepare to change the image of vocational education. The experiences include:

- Reading the information sheet, examining the image of vocational education.
- Designing and conducting a locally based survey on the image of vocational education.
- Developing a comprehensive plan for improving the image of vocational education in your local community/region.
- Assessing the students' publications relations efforts.

Activity Sheet #1

A program can be absolutely outstanding and still remain unknown. Public relations is vitally important to the process of generating and maintaining support for programs. But it doesn't just happen. The image of vocational education must be addressed intentionally and repeatedly if its role is to be valued in the schools. This activity is designed to introduce the students to some of the key issues related to public relations and image of vocational education.

Vocational Education and Public Relations

Many people have the idea that the main key to good public relations amounts to little more than placing a quality product on the market, e.g., a good program. The notion is that when the quality is there, then word will automatically spread.

One has to look no further than the world of business to see that it is considerably more complex than that. The best product will likely not sell if it is not advertised.

However,failure can occur for other reasons. What if there was no market to begin with? Perhaps the product was built too well, thus making it too expensive. Maybe it simply "missed the market."

Sound business and marketing practices begin long before the first product ever rolls off of the line. Public demand, economic projections, design variables, and supplier availability are but a few of the parameters which must be factored into the equation. Add some timing and luck and a product **might** sell.

Educational program marketing is subject to the same kinds of factors. Every school has pockets of excellence, where the work goes on quietly, day by day, with little fanfare or recognition. Other programs persist, long after their usefulness has been achieved. It is even possible to supply a demand that has ceased to exist.

Therefore, program marketing and image enhancement are critical issues for education in general and vocational education in particular. The remainder of this learning activity is designed to help students think through and experience some of the issues involved in program marketing and image enhancement.

Activity Sheet #2

Before you can begin the process of public relations, you must first know your audience. Otherwise it is quite likely that you will be attempting to send the wrong message to the wrong audience for the wrong reason at the wrong time. This activity is designed to help the students learn the process of getting to know their audience prior to beginning the public relations process.

Public Relations - Knowing Your Audience

This activity outlines three different possibilities for conducting a community survey of attitudes toward vocational education. Many people are very suprised and unaware of the kinds of attitudes that are held by various sectors of the community toward vocational education. Resources invested in marketing will be wasted unless the critical first step...getting to know the community...has been done.

1. The first step involves establishing a plan of action for conducting a survey of the community. There are many possible approaches. As with any activity, you may wish to begin by having the students generate some possibilities. After you have established the need for assessing the community, have them brainstorm some possible approaches.

2. Three alternative approaches which could be used for the process (including some implementation suggestions) are:

   - Person on the street interviews:

     - Students could identify some strategic locations for approaching people for spontaneous responses to selected questions. Potential sites could include a city park, swimming pool, shopping mall, student union, city streets, etc.

     - Have the students formulate the questions that they would like to ask. They should attempt to think of questions that can be done quickly with little thought, particularly if the goal is to capture spontaneous thinking and first thoughts. It is unlikely that people will want to be engaged in periods of long conversation. They could ask,

       "What do you think of when you think of vocational education?"
       "What kinds of students take vocational education classes?"
       "Do you think vocational education is doing any good in this community? if so, What? Why or why not?

     - It would be useful to capture the comments on audio tape. Of course, it is vital that students secure permission before taping the comments. Taping can serve at least two different kinds of purposes. First, it provides an accurate account of what is said for later transcription. Second, it could be used as part of a audio-video production at some later date.

- Structured interviewing:

  - Students could conduct a series of structured interviews with selected individuals in the community. These could include:

    Business leaders
    Political leaders
    Educators
    Blue collar workers
    Bankers
    Guidance counselors
    Newspaper editors

  - As with the on street interviews, it will be important to think through the questions which will be posed during the interview process. It may also be advantageous to tape the process for the same reasons which were suggested previously.

- Mailed surveys:

  - A mail survey could be developed. This could be approached as an excellent means of introducing undergraduate students to the process of conducting research.

  - As with the other methods, the process of formulating appropriate questions is absolutely critical. It might be useful to have students consult with others, e.g., a vocational school director, a guidance counselor, a teacher, etc. to validate the questions.

3. There are infinite possibilities for formulating and packaging the results of the survey. Students could:

   - Prepare a formal written report of the results
   - Develop a slide or audio taped presentation
   - Develop and verbally present the results

4. Begin the process of thinking about the implications of the results for the marketing process.

Activity Sheet #3

Sound planning is at the heart of good public relations. Only occasionally are the positive aspects of people and programs held up before the public view. Problems, mistakes, and impropriety make the press without effort. If the positive aspects of vocational education are to be recognized, it will not happen accidentally...it must be planned.

Public Relations Planning

This activity is designed to stimulate ideas for planning the public relations process. The goal is to help students engage in a process of planning for effective public relations and program marketing. It is important that students realize that there are essentially two different marketing thrusts which must be addressed. These are: (a) internal marketing and (b) external marketing. Internal marketing includes the message that is directed to others who are within the school system, e.g., guidance counselors, students, school administration, school board members, teachers, etc. External public relations is concerned with the audience which is external to the school, e.g., parents, community leaders, business people, and the general public.

1. As an initial activity, have each student prepare a short (1 page or so) paper which describes an example of an effective advertisement. This could be from television, a magazine or newspaper ad, a radio spot, etc. The paper should include:

   - A description of the advertisement
   - An assessment of what techniques make the ad effective, e.g., urgency, promise of personal attractiveness, etc.
   - An assessment of the potential of the strategies for promoting vocational education.

2. Conduct a brainstorming session of the ideas as a class.

3. Next, discuss the important dimensions which should be addressed in good public relations. The questions which should be focused are:

   - What is the central message (or messages) that needs to be sent?
   - What are the primary goals of the public relations effort and how should they be prioritized?
   - Who is the audience(s)?
   - Which is the most important audience which should be targeted?
   - What kinds of possible public relations format should be developed?
   - What kinds of resources (people, money, expertise, etc.) can be tapped?

4. Have the students develop a marketing product. This could be done as a class or individually. This activity should represent a capstone activity. It should be based on what the students have learned through the community survey process (Activity #2) and the solid goal setting procedures which were developed during this activity. Possible outcomes or products could include:

   - Radio spot
   - Video
   - Brochure
   - Poster
   - Speaking engagements promoting and interpreting vocational education within or outside of the school
   - Action displays at a local shopping mall
   - Booths at a fair
   - A newspaper ad

Activity Sheet #4

This activity is designed to serve as a checklist for assessing the effectiveness of comprehensive public relations efforts.

Public Relations Assessment

	N/A	Poor	Fair	Good	Excellent
1. The general public relations goals were specified.	☐	☐	☐	☐	☐
2. The specific vocational programs or program activities which need to be promoted were identified.	☐	☐	☐	☐	☐
3. The target audience(s) were appropriately identified.	☐	☐	☐	☐	☐
4. Key events or opportunities for making contact with the targeted audiences were identified.	☐	☐	☐	☐	☐
5. Input was obtained from a variety of sources and resources.	☐	☐	☐	☐	☐
6. The media which is available (or potentially available) to the school was identified.	☐	☐	☐	☐	☐
7. A variety of media options were explored.	☐	☐	☐	☐	☐
8. The selected approach was appropriate for:					
a.) the established objective(s).	☐	☐	☐	☐	☐
b.) the philosophy espoused by the school.	☐	☐	☐	☐	☐

c.) the available resources. ..... ☐ ☐ ☐ ☐ ☐

9. The plan included an appropriate time schedule. ..... ☐ ☐ ☐ ☐ ☐

10. Necessary administrative approval was secured at strategic times throughout the process. ..... ☐ ☐ ☐ ☐ ☐

11. Methods for obtaining feedback to gauge the effects of the promotional effort were established. ..... ☐ ☐ ☐ ☐ ☐

Additional Comments:

Adapted from the American Association for Vocational Instructional Materials, Module G-1: Develop a School-Community Relations Plan for Your Vocational Program, pp. 25-26.

Notes

Learning Experience III

High School Graduation Requirements

Learning Experience I Competencies/Tasks:

7. Identify local and state high school graduation requirements and explain how vocational education can be used to help fulfill them.

8. Develop an overall strategy for explaining vocational education's role and contributions in the school.

9. Interface vocational education to the state's master list of key skills and core competencies.

Introduction:

Learning Experience III will involve four different activites. Each activity explores some aspect of the interface between high school graduation requirements and vocational education. The experiences include:

- Reading the information sheet, Missouri Minimum High School Graduation Requirements.

- Examining the state's master list of the ***Core Competencies and Key Skills for Missouri Schools*** to target those which are being (or could be) effectively met by your vocational program.

- Developing and conducting a structured interview with local secondary school personnel with a goal of becoming better informed about how the school interprets and manages the state's high school graduation requirements.

- Your class will be organized into two groups to debate the issue, "Should vocational education courses be allowed to count toward the fulfillment of high school graduation requirements"?

Activity Sheet #1

High school graduation requirements for the state of Missouri are developed and administered through the Missouri State Department of Elementary and Secondary Education. Over the years the requirements have changed. In the decade of the eighties, additional changes were made, at least partially in response to the need for educational reform. This learning activity traces the requirements through over 75 years of history.

Missouri High School Graduation Requirements

Background and Philosophy **

Since 1916, the State of Missouri has, through the Department of Elementary and Secondary Education and its antecedent agencies, specified the subject areas and the minimum number of units in each which must be completed by students to be eligible for a high school diploma. Until the State Board of Education revised the standards in 1973, the minimum requirements were relatively straightforward and inflexible, and had changed little over the 56-year period. A comparison of the 1916 standards with those in effect in 1972 illustrates the nature of the requirements and how little they had changed.

1916 Minimum Requirements		1972 Minimum Requirements	
English	3 units	English	3 units
History	2 units	Social Studies	3 units
Science	1 unit	Science	1 unit
Mathematics	1 unit	Mathematics	1 unit
Electives	9 units	Fine Arts	1 unit
TOTAL	16 units	Practical Arts	1 unit
		Physical Education	1 unit
		Electives	6 units
		TOTAL	17 units

In 1973, the State Board of Education made significant changes in the state minimum high school graduation requirements both in the minimum number of units required and in the underlying philosophy. The number of units required was increased from 17 to 20 units, but the number of specific course requirements was reduced from 11 to 9 units. The new graduation requirements were designed to provide school officials, parents, and students flexibility in designing each student's program of studies to meet that individual's instructional needs. The flexibility provided to local schools by the State Board is reflected in the first sentence of the state's graduation requirements: "To meet high school graduation requirements, a student must complete a minimum of 20 units of credit during grades nine and above in a program which should be cooperatively planned by the student, his parents, and the school to meet individual needs of the student."

The guidelines issued by the Department to implement the 1973 standards encouraged the development of a four-year, planned program of studies for each student. The program of studies would include coursework required to meet the minimum standards for graduation, but would also address the student's academic deficiencies, if any; provide the academic background necessary for success in college if that were the student's goal; or, provide the basic general educational background necessary for successfully completing a vocational-technical education or for entering the work force directly after leaving high school.

While the emphasis was on flexibility, the State Board of Education felt some minimum course standards must be included. The following minimum course standards were included in the 1973 high school graduation requirements:

1973 Minimum Requirements

Communication Skills	1 unit
Social Studies	1 unit
Science	1 unit
Mathematics	1 unit
Plus 2 units from above areas	2 units
Fine Art	1 unit
Practical Arts	1 unit
Physical Education	1 unit
Electives	11 units
TOTAL	20 units

Local boards of education were encouraged to adopt course requirements for their own districts above the minimums specified by the State Board of Education, and to add other requirements which seemed in the best interests of the local students.

Following the 1973 revision, local school districts had the responsibility of implementing the dual minimum graduation standards — minimum course requirements within a four-year, planned program of studies — as they best understood the needs of their students. Apparently, school districts followed the spirit of the revised standards in some ways, but did not in others. For example, a 1982-83 study revealed that 367 high school districts out of the 455 in Missouri significantly exceeded the minimum number of required units of communication skills by requiring students in those districts to complete three units. In science and mathematics, however, 344 and 268 districts, respectively, required students to complete only the minimum state requirement of one unit each. By the 1982-83 school term, 310 high school districts were requiring students to complete 22 or more units of credit for graduation while only 79 required the State minimum of 20 units.

The Department and the State Board of Education received a steady flow of comment and criticism over the ten-year period during which the 1973 standards were in effect. Most of the comment focused upon two issues: (1) the school districts were not requiring sufficient credits in mathematics and science to ensure competency in those subjects upon graduation; and (2) the four-year, planned program of studies approach was not being implemented systematically across the State. Too many students, it was charged, were permitted to enroll in any available course that would meet the State or local graduation requirements without regard to the students' specific academic needs or post-secondary goals. This resulted, according to the critics, in graduates who were prepared neither for higher education nor the work force.

While the problem was already under study in the Department of Elementary and Secondary Education, A Nation at Risk and other reports critical of American high schools were released. Many of the reports recommended that minimum course requirements be increased for all students and that college-bound students be required to take a rigorous academic program. At the same time, those interested in preparing students for the world of work upon graduation from high school recommended that students have available sufficient electives to allow those students to take the vocational-technical courses needed for successful employment. The challenge, which became more urgent with the release of the various national reports, was to develop new state minimum high school graduation requirements which would provide reasonable assurance that:

(1) all high school graduates complete a core of general courses which would prepare them to meet the basic demands of life in a modern society;

2) high school graduates desiring to enter the world of work immediately could take the needed vocational courses as part of their high school programs; and

(3) high school graduates desiring to enter college could complete a rigorous academic course of study which would enable them to successfully complete a college program.

Department staff members studied the national reports and other national data available on state minimum graduation requirements, reviewed the 1982-83 study conducted by the Department, and sought the advice of the approximately 4,000 Missourians attending the 1983 Regional Educational Conferences. The results all pointed to the need for, and wide-spread acceptance of, new more rigorous minimum high school graduation requirements for Missouri's students.

After studying staff recommendations at its October 1983 meeting, the State Board of Education adopted the following minimum graduation standards at its November 1983 meeting, to be effective with the graduating class of 1988:

1983 Minimum Requirements

English	3 units
Mathematics	2 units
Science	2 units
Social Studies	2 units
Fine Arts	1 unit
Practical Arts	1 unit
Physical Education	1 unit
Electives	10 units
TOTAL	22 units

It is important to note that in adopting the 1983 minimum course requirements for graduation, the State Board of Education retained its basic philosophical viewpoint — that the graduation requirements should be met within a program cooperatively planned by the student, his parents, and the school to meet the individual needs of the student. The Board hopes and expects that the three units of English, for example, will not be the same three units for all students; that the English courses for each student will be carefully selected to meet the student's individual needs. If the four-year, planned program of studies concept is not implemented, the new minimum course requirements will not, by themselves, achieve the desired results.

The minimum graduation requirements are designed to help assure an acceptable level of education for all the students in our schools. A large number of Missouri's students are capable of a more rigorous program of studies than the minimums would require. To help encourage the most capable students to follow a program of studies that will enable them to successfully complete a college education, the State Board of Education developed the College Preparatory Studies Certificate. The College Preparatory Studies Certificate is expected to be an incentive for students, whether they intend to enroll in a four-year college program or not, to complete an academically rigorous program of studies at a high level of achievement.

Missouri Minimum Graduation Requirements

Effective with the Class of 1988

English	3 units
Mathematics	2 units
Science	2 units
Social Studies	2 units
Fine Arts	1 unit
Practical Arts	1 unit
Physical Education	1 unit
Electives	10 units
TOTAL	22 units

Activity Sheet #2

The state of Missouri has compiled a comprehensive listing of key target skills which are designed to serve as standards for the various areas of the academic curriculum. These are called the ***Core Competencies and Key Skills for Missouri Schools***. This exercise is designed to introduce you to these skills and then examine their interface with your vocational teaching area.

Core Competencies and Key Skills

Part A: Introduction to the Core Competencies and Key Skills

The impetus behind the development of the Core Competencies and Key Skills was the Excellence in Education Act of 1986. The original Core Competencies/Key Skills were published in 1986-87. Although originally specified for grades K-12, the decision was eventually made to focus, at least in the initial years, on grades 2-10.

A sample Key Skill for Grade 10 Mathematics is displayed below.

KEY SKILL

- Mathmatics 10A-5: Use mathematical relationships to simplify expressions.

CONCEPT ANALYSIS

Students should appreciate and utilize the power of mathematical abstraction and symbolism through the continued study of algebraic conceps and methods. Use of the mathematical properties of numbers introduced in earlier grades should help students develop the language and symbolism needed to express mathematical ideas orally and in writing, to read written presentations of mathematics with understanding, and to recognize equivalent representations. Application of mental computation skills should be demonstrated and practiced.

TEST CONTENT SPECIFICATION

Component Skills:

A. Simplify mathematical expressions.
B. Simplify algebraic expressions.

Specification:

Students are given a mathematical or an algebraic expression. They are asked to simplify the expression. Emphasis will be placed on equivalent expressions illustrating use of properties, not on order or operations.

Sample Item:

1. Simplify

$x(x - 3) + 3x$

A. $X^2 + 3X - 3$

B. X

C. $4X^2 + 3X$

D. X^2

What kinds of information do these documents contain? The Core Competencies are connecting strands that generally run from level to level. The Key Skills are learning outcomes which are considered to be key indicators for the associated competencies. The Missouri Mastery and Achievement Tests (MMAT) were developed specifically to test the mastery of the competencies.

Some key points about the document should be noted:

- The Core Competencies/Key Skills do not represent all that schools can, and should teach. Rather, they are the skeleton core of knowledge that every student should learn.
- One important criterion which was used by the committees identifying the Core Competencies/Key Skills was they they should each represent the knowledge or skills students need to successfully accomplish the next higher learning task.
- The Core Competencies/Key Skills are not designed to measure only what has been learned in the year the test is taken; rather, they represent what should be the cumulative learning of the school experience up to the testing date.
- Each Key Skill is identified with a letter and a number. The letter represents the Core Competency strand, and the number provides identification for the Key Skill within an area.
- Key Skills that are preceded with the symbol "•" are those for which test items are to be included in district testing programs and the annual state assessments. Key Skills not preceded by any symbol are those considered to be of importance for local assessment. All Key skills are considered to be so critical for subsequent student learning that records of individual student's performance on each skill should be maintained to insure eventual mastery by every student.
- A sample item is included in the specifications for each tested Key Skill to indicate the level of difficulty which students will encounter on the MMAT.

** The above information was adapted from the January 1990 Missouri Department of Elementary & Secondary Education Core Competencies and Key Skills for Missouri Schools — Mathematics Grades 7 through 10.

Part B: Exploring the Interface between the Core Competencies and Key Skills competencies for Vocational Education.

1. Obtain a copy of the Core Competencies and Key Skills for Missouri Schools document from your local school administrator, Missouri Vocational Resource Center (University of Missouri-Columbia, 8 London Hall, Columbia, MO 65211), or the Center for Educational Assessment (403 S. 6th Street, Columbia, MO 65211).

2. Have the students review the Core Competencies and Key Skills for Grade 10. Have each student identify a minimum of 20 of the skills which could be reinforced in their vocational education courses.

3. Next, have the students identify 20 competencies from their vocational teaching area. These could be from a vocational Competency Profile or drawn from the competency list for a course of study.

4. Prepare an academic skills reinforcement matrix (see sample below).

Key Skill / Voc. Comp.	Key Skill 1	Key Skill 2	Key Skill 3
Vocational Competency 1	X		
Vocational Competency 2			X
Vocational Competency 3	X	X	
Vocational Competency 4	X		
Vocational Competency 5			

5. Place an "X" in the spaces where the key skills are (or could be) reinforced by the delivery of a particular vocational education competency.

6. Have the students prepare a report which presents and describes the results. The paper should be written to promote vocational education's role as reinforcing key academic skills.

Activity Sheet #3

In Activity 1 you were introduced to the Missouri State High School Graduation Requirements. This does not, however, mean that all of the decision making has been removed from the local school districts. This activity is designed to help the student become more familiar with local interpretations and requirements.

Interpreting High School Graduation Requirements

The State of Missouri requires 22 units for High School graduation. Within the framework which was described in Activity 1, additional decisions must be made at the level of the local school system. One important example is that many school districts set forth specific recommendations for students who are preparing for college, vocational school, work, etc. Typically, this affects the 22 unit structure in at least two ways.

- First, schools may require certain courses to be taken to meet one set of requirements, for example the English block.
- Second, specific requirements may be made for how the student is to use the 10 units of electives.

Requirements may also differ substantially based on local factors, e.g., the kinds of resources that a community may have, proximity to an AVTS, special program offerings, etc.

This activity consists of a structured interview of local school officials. Students should attempt to arrange to interview a cross section of individuals including guidance counselors, principles, school board members, teachers, parents, and students.

1. The initial step is to involve students in the process of developing the interviewing format. For example, they should ask about requirements for college preparatory certificates, how vocational education courses are counted, requirements for special needs populations, etc. Beyond the fact finding kinds of information, they may also want to inquire about special problems with the present structure, recommendations for future changes, etc.

2. Have the students brainstorm a listing of potential interviewees. Preliminary contacts should be made with interviewees and a schedule will need to be set. Make certain that a broad cross-section of people are interviewed.

3. Each student should develop a report which captures the results of the interview.

4. After the interviews have been conducted, arrange for a class session during which the results will be presented.

5. Based on individual presentations of results, move the process to the level of future planning and implications for vocational education. Sample questions could include:

    - What kinds of changes should be made to the graduation requirements which would help the school system better serve students, teachers, administrators, the community, the state, the nation?
    - How could requirements be changed (or what degrees of freedom exist in the present situation) to provide for better integration of vocational and general education?

- What kinds of changes are going to need to happen during the next generation to ensure the delivery of an appropriate education for tomorrow's world?

- What mechanism could be developed to facilitate better information flow between schools, parents, legislators, DESE, and teacher educators regarding secondary school requirements? What kinds of problems have developed due to a lack of information flow?

Activity Sheet #4

It is clear that a gap exists between the vocational and general education parts of the school. The separation is artificial and unfortunate. Many of the competencies which are delivered in vocational provide excellent reinforcement for skills which are targeted in general education classes. This activity is designed to sharpen the issue by engaging the students in debate over the nature of high school graduation requirements.

Debating the Issue

One of the effective methods of helping students focus the issues related to general and vocational education is to engage in debate. Students generally find it rather easy to identify the **problems** which are present within the educational system. Examples could include a lack of funding, low enrollments, time for course planning, coping with diverse student abilities, managing discipline, and more. However none of these examples are issues. They are problems or difficulties. Each have the potential for becoming issues. Issues usually surface when people begin to formulate solutions to problems.

In general, the more difficult the problems are, the greater the likelihood that disagreement will be generated in how they should be solved. A sample issue could involve a solution to the problem of discipline. One view could assert that the responsibility for discipline is primarily with the administration and administrative policy. An opposing view is that the responsibility for maintaining control is primarily with teachers.

This activity will focus on the problem of the artificial wall which has been erected between the vocational and general education worlds. The method will be to focus the issue and then engage in debate.

1. Divide the class into two groups. You may wish to structure the groups such that those who are more vocationally and occupationally oriented/focused are in one group and those who are more oriented toward general education are in the other.

2. Students will be asked to prepare to debate the issue, "should vocational education courses count toward meeting high school graduation requirements?"

3. Assign the vocationally oriented group to the position which is to argue against the question and the general education group the proponent position.

4. Have the two groups prepare for the debate by developing a base of supporting evidence from the literature. This (3-5 page paper) should be prepared and submitted prior to the debate by the group.

5. Conduct the debate session. Stress the importance of backing arguments with evidence and supporting data. Stress the importance of attempting to effectively argue a position which they may not necessarily support.

6. Debrief the debate. What did they learn about the opposing point of view? What kinds of evidence proved to be most convincing? What are the vital strengths which vocational education brings to the educational system? What are the most serious weaknesses? How can the political factors which are present in the debate be overcome or manipulated?

Activity Sheet #5

The feedback activity will consist of composing a letter which is designed to synthesize information learned throughout the activities in Learning Experience III.

Learning Experience III Assessment

Prepare a letter to a school board member, a guidance counselor, a high school principal, a parent, or a student, based on the information that you have learned from the activities in Learning Experience III. The letter should be designed to:

- Inform the individual about the high school graduation requirements.
- Promote vocational education as a key delivery mechanism for many key general education skills.
- Emphasize the value of vocational education in reinforcing basic skills.
- Argue for a closer tie between the vocational and general education sectors of the school system.

The letter should be evaluated according to two criteria.

a. Clarity and appropriateness of communication.
b. Quality of information communicated (consistent with the information learned through Learning Experience III).

Notes

Learning Experience IV

Developing Joint Vocational Activities

Learning Experience I Competencies/Tasks:

10. Demonstrate methods of using vocational education to reinforce basic academic skills.

11. Promote vocational education as a means of practical application of content from other areas of the school's curriculum.

Introduction:

Learning Experience IV will include two activites. These activites are designed to help students explore ways in which to interface vocational and general educational activities. The experiences include:

- Reading the information sheet, developing joint vocational activities.
- Selecting and designing an activity in conjunction with a teacher from a general education area. The activity will be designed to integrate knowledge from across the range of vocational and general education content areas.

Activity Sheet #1

As we stand at the brink of the 21st century, it is clear that workforce needs are changing. One of the implications for education is that general and vocational education are being drawn more closely together to meet the need. The following paragraphs will focus the issue and introduce some key points.

Developing Joint Activities

How many times have you had a student ask the question, "Will you count off for spelling?"

The question does more than send the signal that the student does not understand the importance of basic skills like spelling, reading, and the like. It probably also means that there is a lack of understanding of how basic skills can be reinforced in vocational education classes.

The genius of vocational education has been its emphasis on practical and useful skill development. Over the years, the attempt has been to anticipate the needs and trends that are active in the workforce so that the proper skills could be developed.

But the workforce is changing. Over the past century our economy has evolved from an agricultural base, through an industrial base, into an information/service economy. The implications of these changes are very important for education in general and vocational education in particular.

One important trend which has occurred as a result of these changes in society is that the goals of vocational and general education are being drawn more closely together. As we move toward the 21st century, it is clear that the competencies which used to be at the center of general education are increasingly being required in vocational education as well. The wall between the two is rapidly being disassembled.

A training representative for a major manufacturer recently remarked that "the screening tests for service personnel have changed dramatically in the past several years. The tests used to deal mostly with mechanical questions. That's changed. On the last test there were no mechanical questions. They want to see if applicants can read, write, solve problems, and interpret directions."

So, the basic skills of general education are rapidly merging with the key competencies for vocation education, and why not? The goals of vocational education and general education are more alike than they are different. The general and vocational education structures are both stronger when they are working together, rather than competing, to meet the needs of tomorrow's world.

There are at least five major ways in which vocational education can provide support for general education programs:

- Reinforcing general education skills and principles
- Providing an alternative mode of delivery for general education skills
- Serving as an applications arena for skills developed in other areas
- A mechanism for integrating a variety of content learned in other areas
- Addressing a range of employability skills which apply to everyone, in any field of employment

Module : Vocational Education in the Whole School Curriculum

Lynch (1991) has identified nine categories of skills that workers will need in the future. These are:

- **Computers and Technology**
  programming simple jobs, using software extensively, maintaining equipment.
- **Problem-solving, critical thinking, decision making**
  knowing how to learn, finding answers and solving problems.
- **Resource management**
  scheduling time and personnel, budgeting, using human and capital resources appropriately.
- **Economics of work and the workplace**
  understanding organizations, profit, work relationships, work ethics, national and international systems.
- **Applied math, science, social science, and communications**
  using numbers, theories and fundamental math and science principles and effective language skills in the workplace.
- **Career and personal planning**
  setting priorities, taking advantage of continuing education and training opportunities, managing parenting and family life, maintaining personal health.
- **Interpersonal relationships**
  having appropriate values and attitude toward teamwork and working effectively with customers.
- **Information and data manipulation**
  finding and managing information, using data, understanding systems and symbols, keeping records.
- **Technical skills**
  to the level required to sustain career employment.

Clearly, these skills are at the intersection of where vocational and general education overlap and interact with one another. So, more than at any other point in history, it is important that teacher education programs, no matter what the teaching area, help future teachers recognize the important dimensions that the vocational and general education systems bring to education.

So, does spelling count? You bet it counts!

Lynch, R. L. (1991). Teaching in the 21st century. Vocational Education Journal, 66(1), pp. 28-29.

Activity Sheet #2

An important goal of vocational education is to reinforce general education skills. This activity is designed to move forward one additional step. Students will develop an activity which draws jointly from the vocational and general education areas.

Reinforcing General Education Skills

As with other applications oriented skills, it is one thing to hear or see how something is done. It's often quite another matter to be able to do it yourself. Good demonstrations are of course helpful. But the **real** learning tends to occur when you actually do something for yourself.

This activity is designed to involve students in actually **doing** (designing and developing) an interdisciplinary educational activity. Some excellent examples of these types of activities have occurred in recent years. Consider, for example, the Principles of Technology programs which integrate math and science concepts with the study of technology. Many school systems, capitalizing on student interest in the space exploration, have developed outstanding, academically integrated space simulations. Another school built on the hysteria generated by the December 1990 earthquake prediction for southeast Missouri, to develop an academically integrated earthquake simulation unit (reinforcing concepts from geology and physics) into the curriculum. Additionally, the integration of the computer throughout virtually every aspect of the schools has contributed many additional linkages across the curriculum.

Two different approaches will be suggested for this activity. The first will be the ideal. The second will serve as an alternative.

Option A: Explore the possibility of working cooperatively with a faculty member from outside of your service area. One potentially workable situation would be to collaborate with a faculty member who is teaching a teaching methods or curriculum development course in another department in the college of education (or perhaps outside of the department). For example, a faculty member from another department in the college of education, e.g., Curriculum & Instruction, Higher & Adult Education, Health & Physical Education, Special Education, or other, could work together. As an alternative, vocational education faculty members from different service areas (agricultural education, business education, marketing education, home economics education, or industrial education) could work together.

The idea is to arrange for one collaborative assignment between members of the two classes (from the two different courses). This could be done by pairing one individual from each course or perhaps by working in groups.

Working collaboratively, have the students develop an activity which could be delivered to students that targets the kinds of skills which are unique to each of the areas. The primary object of the activity is to develop an activity that reinforces skills from both areas. An example would be a methods student from vocational electronics working with a science education student to develop a hands on activity dealing with an aspect of microelectronics.

Among the components that should be incorporated into the project are:

- Activity objectives/competencies
- Supplies and equipment needed
- Safety considerations
- Evaluation/grading procedures (including any pre or post tests)
- Scheduling information

- Suggestion for motivating and generating student interest in the activity
- Recommendations for remediation and/or enrichment
- Prerequisite information
- Key suggestions for how to reinforce skills from each area and beyond the teaching areas represented in this project
- An outline of the parameters of the activity (this may range anywhere from a detailed plan of procedure to a general outline of the broad framework of the activity, leaving the students to fill in the details)
- Handout information

The background work will necessarily need to be laid by the instructor well in advance of the beginning of the course.

Option B: The primary goals for this option are the same as for Option A; that is, to develop a student activity that promotes collaboration with and reinforcement of skills from the general education area. In the event that arrangements cannot be made to conduct an activity jointly with another class, have the students (working individually or in groups) develop an academically integrative activity using the same guidelines outlined in Option A.

Require the students to identify and then interact with a professional from the primary reinforcement area. This could be a university faculty member, a public school teacher, someone from the private sector (e.g., business or industry), or others. The most important goals of the interaction should be to generate, or provide additional focus for, an idea for an activity that will:

- stimulate and interest students
- reinforce key academic skills

For this activity the students should be encouraged to dream and "think big." As mentioned above, one of the excellent examples has been space simulation activities. Students have constructed elaborate simulation environments, complete with computer controlled and satellite connected communications interfaces. They have interacted internationally with students engaged in a similar "flight" in another part of the world. Arrangements have been made for former astronauts to telephone in. Scientific (physical, biological, and social) experiments have been conducted. On occasion, academic pep rallies have even been held.

Certainly it will not be necessary for your students to develop an activity of that magnitude. They should, however, be strongly encouraged to extend their vision beyond their own teaching area (and their own set of competencies and goals) to include the reinforcement of key skills and knowledge from across the entire curriculum.